

Equivalence of Two Kinds of Stability for Multi-dimensional

ARMA Systems

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Abstract. Under some reasonable conditions imposed on the moving average part $C(z)w_k$ of the multi-dimensional system $A(z)y_k = C(z)w_k$ it is shown that for stability of $A(z)$, which means that all zeros of $\det A(z)$ are outside the closed unit disk, the necessary and sufficient condition is the stability of the system in the mean square sense, by which it is meant that the long run average of the squared output is bounded.